

特開平11-57155

(43) 公開日 平成11年(1999)3月2日

(51) Int.Cl.⁵

A 63 F 7/02

識別記号

3 2 4

F I

A 63 F 7/02

3 2 4 C

審査請求 未請求 請求項の数 5 F D (全 8 頁)

(21) 出願番号 特願平9-231758

(22) 出願日 平成9年(1997)8月12日

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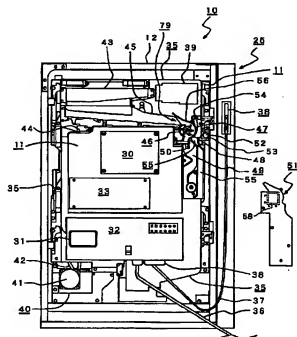
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(54) 【発明の名称】 弾球遊技機

(57) 【要約】

【課題】 中継櫃に設けられる球切検出スイッチの不備を排除する遊技機を提供すること。

【解決手段】 中継櫃に設けられる球切検出スイッチを設けなく内枠制御装置で制御する払出装置をソフト的に払出遊技球数検出器で制御し、2 條設けた払出装置であつたら、1 條が払出遊技球数検出器で遊技球を検出できなくても他の払出遊技球数検出で検出可能であり払出を続行させることができるようにし、1 つの払出遊技球数検出器で払出ができないときに表示装置や音声装置で報知を行えば速やかなる対処ができる。構造が払出部においてスプロケットや玉抜き装置及び払出遊技球数検出器を一体的に構成すればトラブルによる交換が簡単になり、交換した後で調整する必要もなく、また遊技機の製造段階でも取付けが簡単に行ふコスト的に有利になる。



【特許請求の範囲】

【請求項 1】 遊技球を発射する発射装置と、該発射装置により発射された遊技球の挙動により入賞等が成立したことに起因して規定数の遊技球を賞品球として払出す払出装置と玉貸制御装置による規定数の遊技球を玉貸払出手段とを兼ね備える払出装置で該払出装置の払出遊技球数検出装置と、

入賞を検出する入賞検出手段と、
前記払出装置に賞品球とする遊技球を供給する球タンクと、

該球タンクから遊技球を誘導するタンクレールと、
該タンクレールまたは球タンクに設けられる遊技球の有無を検出する遊技球検出手段からなる弾球遊技機において、

前記入賞検出手段が入賞を検出して前記払出装置が遊技球を払出すとき、

前記遊技球検出手段が遊技球の空を検出し、

前記払出装置の払出遊技球数検出装置が遊技球を検出できないときに遊技球の払出しを中断させると共に前記入賞検出手段も中断し、

前記遊技球検出手段が遊技球を検出したら遊技球の払出しを再開させ、前記払出装置の払出遊技球数検出装置が遊技球を検出したら前記入賞検出手段も再開させることを特徴とする弾球遊技機。

【請求項 2】 請求項 1 記載の弾球遊技機において、
前記遊技球検出手段が空を検出しないとき複数設けられる払出装置の 1 の払出遊技球数検出装置が遊技球の払出しを検出しないとき払出装置の 2 の払出遊技球数検出装置が遊技球の払い出を検出できるときは 2 の払出装置で規定数の遊技球の払出しをすることを特徴とする弾球遊技機。

【請求項 3】 請求項 1 ないし 2 記載の弾球遊技機において、
複数個設けられる前記払出遊技球数検出装置のうちいずれかが遊技球を検出できないときは表示装置で表示と音声による報知または表示装置が音声のいずれかによる報知を行うことを特徴とする弾球遊技機。

【請求項 4】 請求項 1 ないし 2 記載の弾球遊技機において、
複数個の前記払出遊技球数検出装置の全てが払出の検出ができないときは表示装置で表示と音声による報知または表示装置が音声のいずれかによる報知を行い間歇動作手段で前記払出装置を動作させ、

前記払出遊技球数検出装置のうちいずれかが遊技球を検出したら請求項 3 に示した動作に変更し、全ての前記払出遊技球数検出装置が遊技球を検出したら元の動作にすることを特徴とする弾球遊技機。

【請求項 5】 請求項 1 から 5 記載の弾球遊技機において、
前記遊技球払出装置は球抜き装置と、

前記払出遊技球数検出装置と、

球送出部とを一体的に構成したことを特徴とする弾球遊技機。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、遊技機に於ける賞品球払出装置の遊技球不足検索システムに関する。

【0002】

【従来の技術】従来、遊技機に代表されるパチンコ機では、遊技球が遊技盤に設けられている入賞口に入賞するとその入賞口に設定されている個数の遊技球が払出され、アレンジボール遊技機や雀球遊技機等の組み合わせ遊技機では、遊技球が遊技盤面の入賞口に入球して特定の組み合わせが成立すると得点となり、その得点に依る個数の遊技球が賞球として払出されるのが一般的である。遊技機に於ける発射装置は、例えばモータとばねによって駆動される打撃ハンマによって遊技球を打撃して発射するもの等があり、払出装置は例えばモータによって駆動されるスクリュウやスプロケット等の回転により遊技球を賞品球として払い出す払出装置とを備えている。

【0003】賞球の払い出しは機構盤に上部に球タンクが取付けられ、その球タンクの下部に球流出口が開口しておりこの流出口よりタンクレールに接続されている。タンクレールは球流出口側を上流側にして傾斜が設けられ、下流側はカーブレールを経て中継櫃に接続され、続いて賞品球払出装置へと接続されている。中継櫃には遊技球の有無を検出するためのスイッチが設けられ、遊技球の検出ができないときにはこの信号より遊技球の発射点への送り出しの停止や遊技球の払出しの停止又は発射の停止が行われ、遊技球の払い出しについては遊技球の払出個数が不足にならないようにしている。また機械式の遊技球払出装置は中継櫃にレバーが設けられ、遊技球が無いとこのレバーが浮き上がりレバーの端に設けられた接続連関で球送装置の作動できないようになった構成の遊技機もある。しかしながら次に述べる欠点があり未だに解決をみていない。

【0004】

【発明が解決をしようとする課題】従来、カーブレールから払出装置迄の経路を中継櫃と称しこの中継櫃に球切検出スイッチが設けられ、払出装置は筒型でその筒の中に払出される遊技球を規定数導入して、この筒を傾動させることで払出しを行い、賞品球となる遊技球が払出装置までの間に遊技球が不足すると球切検出スイッチが作動して払出しの動作を止めている。ところで近年 CR 機と称してこの払出装置で貸し玉の払出しを行うようになり複雑な遊技球数を扱い、前述の筒式払出装置では可動させることが困難となり筒式のものがスプロケット方式が採用されるようになった。遊技球不足の検出も従来のように使用されていて、遊技球不足を検出するスイッチは、一般的

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にマイクロスイッチを使用しているがこのマイクロスイッチの欠点を考慮しなく利用している。マイクロスイッチのある動作の範囲でオンとなることをＯＦ、オフとなることをＲＦと称してＯＦとＲＦの製造上の誤差があること、スイッチ内部の接点が焼青銅で作成され、この焼青銅は形状記憶的な要素も含まれ共にこの性質を考慮しないと遊技球があるのを遊技球不足の検出をすることがある。これらの詳細を図４を参照して述べる。

【０００５】図４は遊技機の背面に設けられる機構盤と称して入賞検出や賞品球の引出等を行う装置で遊技機の基本的な動作をさせるものであり、この機構盤に付いては、詳細な図を省略し、本課題である賞品球引出装置のみの説明をする。図４の（ａ）に示す引出装置８０は、図示しない機構盤に賞品球として遊技球を蓄える賞球タンクが設けられこの賞球タンクの下流部にタンクレール８１が接続され、さらにはカーブレール８２を経て、この引出装置８０が球切検出スイッチ８と一体的に設けられている。カーブレール８２には、球抜レバー９０が設けられこの球抜レバー９０を操作すると賞球タンクから上誘導軌８５までの遊技球を抜き取ることができる。上誘導軌８５の下流部に誘導アクチュエータ軸８９に誘導アクチュエータ８３軸支されるの一部が機械接点方式の球切検出スイッチ８に設けられるスイッチアクチュエータ８４に接触させている。したがって、遊技球があるときは誘導壁面８６との間の遊技球とで球切検出スイッチ８が入ったなしになっている、遊技球が無くなると球切検出スイッチ８が切れた状態となる。遊技球は、誘導壁面８６から下誘導軌８６を経てスプロケット９２に至っている。なおスプロケット９２は、駆動モータ９３で制御され詳細を述べない通電をすると駆動モータが回転してスプロケット９２も点線矢印Ｂ方向に回転をする。スプロケット９２が回転をすると図でも分かるように遊技球が下流方向に流れ球検出センサ９４を経て図示しない上皿に排出される。

【０００６】図４（ｂ）で前述した球切検出スイッチ８の詳細を述べる。球切検出スイッチ８にはスイッチアクチュエータ８４で動作させるスイッチノブ８５が設けられスイッチアクチュエータ８４がスイッチ側に動作するとスイッチノブ８５が押し込まれる形となりオン状態となる。機械接点方式のことでこのスイッチは製造上の動作公差が決められていてＯＦ動作何ミリＲＦ動作何ミリといったものがあること、内部スプリングに接点を付けた焼青銅でできている。この焼青銅は少しではあるが形状記憶をすることがありＯＦ動作９８と点線で示すＲＦ動作９９の公差と形状記憶とでスイッチがその使い方で入りにくかったり切れにくかったりする。誘導アクチュエータ８３で押しっぱなしが続くと、球切検出スイッチ８のオンする位置が変わって時々オンしなくなる。このことは遊技球の引出において引出が停止することであり遊技客にしてめれば嫌なものである。この対策として

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考えられることは球検出センサ９４が設けて有るで球切検出スイッチ８が無くても球検出センサ９４で遊技球が無くなったことの検出ができるので次にこの解決手段として述べることとする。

【０００７】

【課題を解決するための手段とその効果】請求項１で示すように、遊技球を発射する発射装置と、該発射装置により発射された遊技球の挙動により入賞等が成立したこと起因して規定数の遊技球を賞品球として引出す引出装置と玉賞制御装置による規定数の遊技球を玉賞引出手段とを兼ね備える引出装置で該引出装置の引出遊技球数検出装置と、入賞を検出する入賞検出手段と、前記引出装置に賞品球とする遊技球を供給する球タンクと、該球タンクから遊技球を誘導するタンクレールと、該タンクレールまたは球タンクに設けられる遊技球の有無を検出する遊技球検出手段からなる弾球遊技機において、前記入賞検出手段が入賞を検出して前記引出装置の遊技球を引出すとき、前記遊技球検出手段が遊技球の空を検出し、前記引出装置の引出遊技球数検出装置が遊技球を検出できないときに遊技球の引出しを中断させると共に前記入賞検出手段も中断し、前記遊技球検出手段が遊技球を検出したら遊技球の引出しを再開させ、前記引出装置の引出遊技球数検出装置が遊技球を検出したら前記入賞検出手段も再開させることを特徴とする弾球遊技機。賞球タンクに遊技球が無くタンクレールに設けた遊技球の有無を検出す検出器が遊技球の空を検出したときに引出遊技球数検出装置が遊技球の通過を検出したら入賞検出を再開させる。つまりタンクレールと引出装置の間に遊技球の有無を検出す検出器を設けなくても遊技球の有無の検出が可能となる。

【０００８】請求項２では、請求項１記載の弾球遊技機において、前記遊技球検出手段が空を検出しないとき複数設けられる引出装置の１の引出遊技球数検出装置が遊技球の引出しを検出しないとき引出装置の２の引出遊技球数検出装置が遊技球の引出しを検出できるときは２の引出装置で規定数の遊技球の引出しをすることを特徴とする弾球遊技機。例えば２條設けた引出装置であったら、１條が引出遊技球数検出装置で遊技球を検出できなくても他の引出遊技球数検出で検出可能である限り引出を続行させることができるようにしたので、この間に引出遊技球数検出のできない原因を調べることが可能となり、入賞球の多いとき入賞球溜めに溜まって入賞球の溜み合うこともなくなる。

【０００９】請求項３は、請求項１ないし２記載の弾球遊技機において、複数個設けられる前記引出遊技球数検出装置のうちいずれかが遊技球を検出できないときは表示装置で表示と音声による報知または表示装置が音声の

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いずれかによる報知を行うことを特徴とする弾球遊技機。1つの払出遊技球数検出装置で払出ができないときに表示装置や音声装置で報知を行えば速やかな対処ができる。

【0010】請求項4は、請求項1ないし2記載の弾球遊技機において、複数個の前記払出遊技球数検出装置の全てが払出の検出ができないときは表示装置で表示と音声による報知または表示装置が音声のいずれかによる報知を行い間歇動作手段で前記払出装置を動作させ、前記払出遊技球数検出装置のうちいずれかが遊技球を検出したら請求項3に示す動作に変更し、全ての前記払出遊技球数検出装置が遊技球を検出したら元の動作にすることを特徴とする弾球遊技機。複数設けた払出遊技球数検出装置が、共に遊技球の検出ができないときは過剰動作を防ぐために間歇的に動作をさせて、請求項3に示す報知と違った報知を行って、払出遊技球数検出装置のうちいずれかが遊技球を検出したら請求項3に示す動作に変更して、払出遊技球数検出装置の全てが遊技球を検出したら元の状態に戻す。複数設けたタンクレール等での玉詰まりは一度に止まることがなく順次止まって行くので、全てが停止する前に対処できるが、仮に全てが止まったときは何れかに原因があるのか判断がしやすい、これにより店員の対処がスムーズに行うことができる。

【0011】請求項5は、請求項1から4記載の弾球遊技機において、前記遊技球払出装置は球拔装置と、払出遊技球数検出装置と、球送出口とを一体的に構成したことを特徴とする弾球遊技機。払出装置を構造的に球拔装置と、払出遊技球数検出装置と、球送出口とを一体的に構成することによりよればトラブルが発生したとき装置自体の交換が簡単になり、交換した後で調整する必要もなく、また遊技機の製造段階でも取付けが簡単に行える。従って生産段階でコストに有利になるばかりか、遊技中であれば遊技客に迷惑を掛けることなく対処ができる。

【0012】

【実施の形態】次に、本発明の好適な実施例を図面を参照して説明する。なお、本発明の実施の形態は、下記の実施例に何ら限定されるものではなく、本発明の技術的範囲に属する限り種々の形態を採り得ることは言うまでもない。

【0013】

【実施例】図1は、弾球遊技機に代表されるパチンコ機で以後遊技機と称する。図1は、遊技機10の正面斜視図で、左側に遊技球の貸出を制御するカードリーダー25を備え図示しない遊技機設置島へ共に設置される。遊技機10は外枠12があって遊技機10の外殻をなし、遊技機設置島に固定する底体でもあり、その外枠12は上下に取付けられるヒンジ14で前面枠13を外枠12に対して開閉可能に取付けられている。前面枠13には上部に大当たりランプ17、右側にストップランプ1

8、満杯表示ランプ19、発射同期ランプ20、払出同期ランプ21を一体的な構造で取付けられ、普段は何も見えないが、例えば、発射が開始される発射に同期してランプが点滅を繰り返して、点灯したときは文字が浮き出て可視でき消灯すれば何も見えないといった構造になっており、ストップランプ18、満杯表示ランプ19、払出同期ランプ21も同様の働きをする。前面枠13には中央に点線で示す図柄表示装置30を備えた遊技盤11が填められており前面枠13の内側周りを意称状の金枠34が取付けられている。金枠34の左側に球抜穴23が設けられていて玉抜棒24でこの球抜穴に差し込めば、詳細を後述する球拔ができる構造となっている。

【0014】前面枠13の中央や下側に上皿15とその下に下皿16が設けられ、上皿15の右側にはカードリーダー25を操作する貸出ボタン28と精算ボタン29が設けられ、カードリーダー25のカード口26に詳細を述べない金銭と交換したカードを差し込めば上皿15に設けられる貸球表示装置27に差し込まれたカードの内容を表示する。カードを差し込んで貸球表示装置27が0表示でなければ貸出ボタン28を押せば、任意の数の遊技球が上皿15に払い出される。貸球表示装置27の貸球残高が残っていると精算ボタン29を押せばカードがカード口26より排出される。前面枠13の右には遊技球を発射するための発射ハンドル22が取付けられていて、この発射ハンドル22を操作すれば上皿15に投入された遊技球を遊技盤11に発射ができる。次に図2で遊技機10の真構造について説明をする。

【0015】図1で説明した発射ハンドル22は、遊技機10の左下に発射モータ41と発射軸42が取付けられた発射装置40に連設されており前述した発射ハンドル22を操作すると発射モータ41が作動しさらに発射軸42が作動する。遊技機10には遊技盤10の全ての動作を司るための機構箱35が遊技盤11を背面から覆うように取付けられている。機構箱35の上部には、賞品球または貸球としての遊技球が貯留された貸球タンク43が付けられ、その下に遊技球の有無の検出や遊技球を遊技機設置島より補給するための補給スイッチ44が付けられたタンクレール45が接続され、貸球タンク43の遊技球はタンクレール45へ流下下状態にある。タンクレール45の下流側には払出装置46と球抜装置47を内蔵したカーブレール56が接続されている。球抜装置47には、球抜弁54が設けられこの球抜弁54と連動する球抜レバー52がレバーバネ53で球抜弁54が外れないように球抜レバー52を付勢しており、図1で述べた玉抜棒24がこの球抜レバー52を押すことで球抜弁54が外れ貸球タンク43やタンクレール45にある遊技球を球抜通路55へ流し球拔ができるようになる。また全ての貸球タンク43やタンクレール45にある遊技球が排出され、再び玉抜棒24で球抜レバー52を押せば球王が球抜弁54にかかっていないので球拔

状態であったものが復帰される。図示する現在の状態は、実球タンク43やタンクレー45に遊技球がなく、払出装46の払出装カバー51が外している状態であって、払出装カバーには詳細を後述する制御ソレノイド58がつけられている。

【0016】払出装46には遊技球を払い出すためのスプロケット48が設けられ、その下流側に払出装球数検出装50が設けられている。スプロケット48は、スプロケット48を中心に遊技球を整列送り出しをする球送部79が成り立っており、この払出の開始が指示されるとスプロケット48が回転して遊技球を下流側である貫球通路49に流せば途中経路にある払出装球数検出装50が通過する遊技球の数を数え、払出される遊技球を定められた数に制限をすることができ、タンクレー45の下に図柄表示装置30の背面部が、その下方に遊技盤制御装置33が取り付けられている。遊技盤制御装置33は遊技盤11に着脱可能に取付けられ、図柄表示装置30や詳細を述べない遊技盤11の表面に設けられる各種入賞口の制御等を行っている。遊技盤制御装置33のその下に内枠制御装置32が設けられ、この内枠制御装置32は前述した払出装46や発射装置及び大当たりランプ17、右側にストップランプ18、満杯表示ランプ19、発射同期ランプ20、払出同期ランプ21等の制御を行っている。

【0017】なお、遊技機10の電源オンのとき遊技盤制御装置33は図示しない各入賞口に対する入賞球数や賞球の初期設定を内枠制御装置32に初期送信を行い、さらに遊技盤制御装置33は遊技中の遊技盤11に発生する遊技情報を間欠的に内枠制御装置32に送信している。内枠制御装置32には、制御情報パネル31が設けられ遊技盤11の作動状況やトラブル情報等の表示を行い、例えば補給スイッチ44が遊技球の空の状態を表示することができ「タンクニタマがアリヤセン」とか、また補給スイッチ44が空を検出せず払出装球数検出装50に賞品球である遊技球の検出ができないときは、タンクレー45に遊技球が噛み合っているものと判断ができて遊技球が流れないとなり「タマツマリデス」の表示をすることができる。本遊技機10には一般的に設けられる発明が解決しようとする課題で述べた図4に示す球切検出スイッチ8が設けていないので時々球切検出スイッチ8が作動して遊技球の払出停止といったことがない。球切検出スイッチ8が無くても同等の働きを払出装球数検出装50で行うことが可能でありしかも優れた働きを課題を解決するための手段と

その効果で説明しように実現できる。
【0018】遊技機10の外殻をなす外枠12の右側にカードリーダー25が併設され、賞球情報コネクタ38が賞球情報線37で内枠制御装置32に接続されている。賞球タンク43の右側には外部接続装置39が設け

られ遊技機10に発生する詳細を述べない大当たり情報、時短モード情報、不正遊技情報、図柄表示装置30の図柄変動情報やタンクレー45に設けた補給スイッチ44による遊技球補給要求情報各種情報を図示しない遊技場管理システムに送信を行っている。内枠制御装置32には遊技機10の全ての電力を賄う電源コード36が付けられている。

【0019】次に図3によって機構部35に付けられる払出装46の斜視分解図で本払出装46について詳細を述べることとする。払出装46は、2條設けられ機構部35に取付けられようとした払出装カバー51により内部保護をしている。払出装カバー51には、ソレノイド固定台63が付けられ、そのソレノイド固定台63には制御ソレノイド58が取付けられている。制御ソレノイド58には、ピストン動作させるプランジャー60が押圧パネ57で飛び出す状態はめ込まれ、プランジャー60の先端にスリーブ62を伴った固定ラチェット59が付けられ、制御ソレノイド58に電力を通電するとプランジャー60が叩き込みソレノイド固定台63の壁面に沿ってスリーブ62と共に制御ソレノイド58の引っ込み方向に引き込まれ固定ラチェット59も同方向に作動し、電力を遮断すれば上述の逆方向に作動する。払出装46のカバーレール56には、押しガイド孔78があるスプロケット軸64が付けられ、そのスプロケット軸64にスプロケット48が破線矢印P方向に挿入され、前述の払出装カバー51のソレノイド固定台63の一部が取着部74に破線矢印T方向に貫入されている。したがって、払出装カバー51を機構部35に取付ける際にソレノイド固定台63の先端を、取着部74に挿入するのみで揺動せず安定した状態で取付けが

できる。
【0020】スプロケット48には、回転ラチェット61が設けられ制御ソレノイド58が非通電のときは固定ラチェット59と噛み合った状態にある。制御ソレノイド58に通電するとスプロケット48はフリーになり遊技球の重みでも自由に回転可能である。払出装46には球抜装置47を併合されていてカールレール56に設けられる図示しない球抜弁軸に球抜弁軸68を伴った球抜弁54が球抜弁軸68を通して付けられている。これによりたえず球抜弁軸68で下方方向に付勢されているのでスプロケット48を包み込む状態になつて、機構部35の一部に台座67が設けられレバー支軸66で作動レバー72に設けられるレバー軸77を通して作動レバー72がレバー支軸66を支点にして揺動可能である。作動レバー72には、一方にロックフリーピンが設けられ、他方には作動軸73設けられたスライダ76が取付けられ、ロックフリーピン65は破線矢印S方向で押しガイド孔に挿入され、スライダ76は球抜通路55に設けられるスライド溝75に破線矢印U方向に置かれる。

【0021】スライダ76には開放ロック部70が設けられ、球抜弁54には球抜弁ロック部71が設けられており、通常時は球抜弁54の球抜弁ロック部71とスライダ76の開放ロック部70とで半固定の状態になっておりスライダ76が破断矢印Uの反対方向に動作すると開放ロック部70と球抜弁ロック部71が離れ球抜弁54はフリーとなる。作動軸穴73は図示しない球抜弁52に接続されており玉抜棒24で球抜レバー52を押せば球抜弁54がフリーで、ロックフリーピン65が固定ラチェット59を押すのでスプロケット48もフリーとなり、仮にスプロケット48やタンクレール45、貫球タンク43に遊技球があると遊技球はスプロケット48が回転してスプロケット48やタンクレール45、貫球タンク43にある遊技球は球抜通路55へ流れ出すこととなる。スプロケット48に遊技球が無くなると球抜弁54は球抜弁重錘68の重みでスプロケット48側に移動するので、再び玉抜棒24で球抜レバー52を押せば球抜弁ロック部71が開放ロック部70の内側に入り込み、玉抜棒24を引き出せば球抜弁54はロックされる。この構造は機械的動作であるので電源が無くても全ての遊技球を抜き出すことができるという優れた効果が得られる。

【0022】スプロケット48やタンクレール45、貫球タンク43に遊技球が保有され球抜弁54が固定された状態で制御ソレノイド58に電力を供給すると固定ラチェット59がスプロケット48の回転ラチェット61から外れスプロケット48に保有する遊技球がその重みでスプロケット48が回転を始めスプロケット48に保有する遊技球は順次貫球通路49の方向に流れる。途中に払出遊技球数検出装置50が設けられているので1個1個遊技球を数えることができる。払出遊技球数検出装置50が遊技球を数えることができない、つまり遊技球を検出できないことは遊技球が無いと判断ができる。本装置のスプロケット48やタンクレール45及び払出遊技球数検出装置50は、2條設けられているので1條が遊技球の供給が止まっても一方で払出が可能である。このとき遊技球の検出ができない払出遊技球数検出装置50は、このことを報知システムで報知すれば遊技球の払出中に対処ができるので入貫球の溜まりと言ったトラブルの回避もできる。

【0023】一般的な払出装置は、普通ステップモーターでスプロケットを回転させ遊技球の払出を行っているが、能動的なスプロケットに対し受動的な遊技球の流

れでは、流れるタイミングのずれ、つまり遊技球と遊技球との間隔がでる場合で本装置のスプロケット48のように歯先を特別に加工しても、従来の方式の能動的な動作をするスプロケットはそのスプロケットの歯先に遊技球が噛み込むことがしばしばある。本装置ではスプロケット48が受動的に動作をさせるので噛み込むことが無くなる。

【図面の簡単な説明】

【図1】 実施例の遊技機正面斜視図である。

【図2】 実施例の遊技機背面図である。

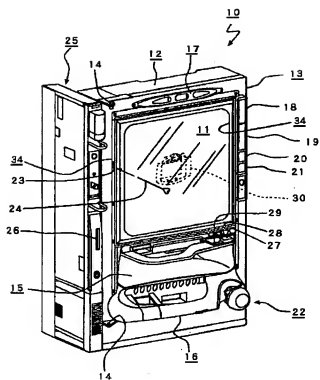
【図3】 実施例の払出装に遊技球の有無を検出する装置を使わずその動作や構造を説明する斜視分解図である。

【図4】 従来の払出装に於ける遊技球の有無検出器を付けて動作させる説明図である。

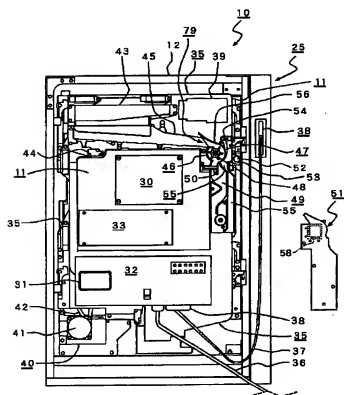
【符号の説明】

10…遊技機、11…遊技盤、12…外枠、13…前面枠、14…ヒンジ、15…上皿、16…下皿、17…大当たりランプ、18…ストップランプ、19…満杯表示ランプ、20…発射同期ランプ、21…払出同期ランプ、22…発射ハンドル、23…球抜穴、24…玉抜棒、25…カードリーダー、26…カード口、27…貫球表示装置、28…貸出ボタン、29…精算ボタン、30…図柄表示装置、31…制御情報パネル、32…内枠制御装置、33…遊技盤制御装置、34…金枠、35…機構盤、36…電源コード、37…貸球情報線、38…貸球情報コネクタ、39…外部接続装置、40…発射装置、41…発射モーター、42…発射軸、43…貫球タンク、44…補給スイッチ、45…タンクレール、46…払出装、47…球抜装置、48…スプロケット、49…貫球通路、50…払出遊技球数検出装置、51…払出装カバー、52…球抜レバー、53…レバーパネ、54…球抜弁、55…球抜通路、56…ケーブル、57…押圧バネ、58…制御ソレノイド、59…固定ラチェット、60…ブランジャー、61…回転ラチェット、62…スレップ、63…ソレノイド固定台、64…スプロケット軸、65…ロックフリーピン、66…レバー支軸、67…台座、68…球抜弁重錘、69…球抜弁軸穴、70…開放ロック部、71…球抜弁ロック部、72…作動レバー、73…作動軸、74…取着部、75…スライド溝、76…スライダ、77…レバー軸穴、78…ガイド孔、79…球送出口。

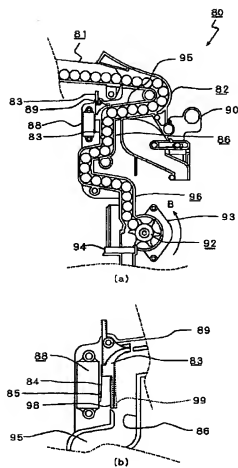
【図1】



【図2】



【図4】



[illegible]

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Bibliography

- (19) [Country of Issue] Japan Patent Office (JP)
(12) [Official Gazette Type] Open patent official report (A)
(11) [Publication No.] JP,11-57155,A
(43) [Date of Publication] March 2, Heisei 11 (1999)
(54) [Title of the Invention] Pinball machine
(51) [International Patent Classification (6th Edition)]
A63F 7/02 324
[FI]
A63F 7/02 324 C
[Request for Examination] Un-asking.
[The number of claims] 5
[Mode of Application] FD
[Number of Pages] 8
(21) [Filing Number] Japanese Patent Application No. 9-231758
(22) [Filing Date] August 12, Heisei 9 (1997)
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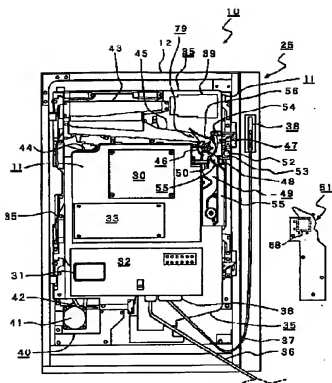
Summary

(57) [Abstract]

[Technical problem] Offer the game machine which eliminates the defect of the **** pilot switch prepared in *****.

[Means for Solution] if the expenditure equipment which does not prepare the **** pilot switch prepared in ***** and is controlled by the seating-rim control unit is controlled by the number detector of expenditure game spheres in soft and it is 2 **** beam expenditure equipment, even if 1 ** cannot detect a game sphere with the number detector of expenditure game spheres — other number detection of expenditure game spheres — detection — possible — ** — as long as — the time of enabling it to continue expenditure and expenditure being impossible with one number detector of expenditure game spheres Prompt management can be performed if display and an audio station report. If structure constitutes a sprocket, **** equipment, and the number detector of expenditure game spheres in one in the expenditure section, exchange by the trouble will become easy, and after exchanging, it is not necessary to adjust and, and it can attach easily also in the manufacture stage of a game machine, and becomes advantageous in cost.

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CLAIMS

[Claim(s)]

[Claim 1] The launcher which discharges a game sphere The number detection equipment of expenditure game spheres which is this expenditure equipment with the expenditure equipment which has a *** expenditure means for the game sphere of the number of conventions by the expenditure equipment and the *** control unit which originate in winning a prize etc. having been materialized by the behavior of the game sphere discharged by this launcher, and pay out the game

sphere of the number of conventions as a prize sphere A winning-a-prize detection means to detect winning a prize The sphere tank which supplies the game sphere used as a prize sphere to the aforementioned expenditure equipment A game sphere detection means to detect the existence of the game sphere prepared in the tank rail which guides a game sphere from this sphere tank, this tank rail, or a sphere tank When it is the pinball machine equipped with the above, the aforementioned winning-a-prize detection means detects winning a prize and the aforementioned expenditure equipment pays out a game sphere, When the aforementioned game sphere detection means detects the empty of a game sphere and the number detection equipment of expenditure game spheres of the aforementioned expenditure equipment cannot detect a game sphere, while interrupting expenditure of a game sphere, the aforementioned winning-a-prize detection means is also interrupted. It is characterized by making expenditure of a game sphere resume, when the aforementioned game sphere detection means detects a game sphere, and making the aforementioned winning-a-prize detection means resume, if the number detection equipment of expenditure game spheres of the aforementioned expenditure equipment detects a game sphere.

[Claim 2] It is the pinball machine characterized by to pay out the game sphere of the number of conventions with the expenditure equipment of 2 when the number detection equipment of expenditure game spheres of 1 of the expenditure equipment formed in a pinball machine according to claim 1 when the aforementioned game sphere detection means does not detect empty does not detect expenditure of a game sphere and the number detection equipment of expenditure game spheres of 2 of expenditure equipment can detect expenditure of a game sphere. [two or more]

[Claim 3] It is the pinball machine characterized by performing information with a display and voice, or information with display or voice with display when either cannot detect a game sphere in a pinball machine a claim 1 or given in two among the aforementioned number detection equipment of expenditure game spheres formed. [two or more]

[Claim 4] In a pinball machine a claim 1 or given in two, when detection two or more aforementioned number detection equipments [whose] of expenditure game spheres of all are expenditure cannot be performed, display performs information with a display and voice, or information with display or voice, and the aforementioned expenditure equipment is operated with an intermittent operation means. The pinball machine characterized by making it the original operation if it will change into operation shown in a claim 3 if either detects a game sphere among the aforementioned number detection equipment of expenditure game spheres, and all the aforementioned number detection equipments of expenditure game spheres detect a game sphere.

[Claim 5] It is the pinball machine characterized by the aforementioned game sphere expenditure equipment constituting **** equipment, the aforementioned number

detection equipment of expenditure game spheres, and the sphere sending-out section from a claim 1 in one in a pinball machine given in five.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the game sphere insufficient retrieval system of the awarded-balls expenditure equipment in a game machine.

[0002]

[Description of the Prior Art] The game sphere of the number set as the winning-a-prize mouth if a game sphere wins conventionally a prize of the winning-a-prize mouth prepared in the game board with the pachinko machine represented by the game machine pays out. It is common that will be scoring if a game sphere carries out an ON sphere to ON **** of the game face of a board and a specific combination is organized in combination formula game machines, such as an arrangement ball game machine and a mahjong ball game machine, and the game sphere of the number according to the score pays out as awarded balls. The launcher in a game machine has some which hit a game sphere and are discharged with the blow hammer driven with **, for example, a motor, and a spring, and expenditure equipment is equipped with the expenditure equipment which pays out a game sphere as a prize sphere by rotation of a screw, a sprocket, etc. which are driven by the motor.

[0003] A sphere tank is attached in the mechanism board at the upper part, and the sphere tap hole is carrying out opening of the expenditure of awarded balls to the lower part of the sphere tank, and it is connected to the tank rail from this tap hole. A tank rail makes a sphere tap-hole side an upstream, an inclination is prepared, and it connects with ***** through a curve rail, and a downstream continues and is

connected to prize sphere expenditure equipment. The switch for detecting the existence of a game sphere is formed in ***** , when detection of a game sphere cannot be performed, a halt of the send to the discharging point of a game sphere, a halt of expenditure of a game sphere, or a halt of discharge is performed by this signal, and it is made for the expenditure number of a game sphere not to become insufficient about expenditure of a game sphere. Moreover, a lever is prepared in ***** , and mechanical game sphere expenditure equipment also has the game machine of composition of that the sphere feeder could operate no longer by the connection association which this lever came floating and was prepared in the edge of a lever, when there is no game sphere. However, there is a fault described below and solution is not yet obtained.

[0004]

[The technical problem in which it is going to solve invention] The path from a curve rail to expenditure equipment was conventionally called ***** , the **** pilot switch was prepared in this ***** , and expenditure equipment number[of conventions]-introduced the game sphere paid out in the cylinder by telescopic, it pays out by making this cylinder tilt, and if a game sphere wants the game sphere used as a prize sphere for before expenditure equipment, the **** pilot switch operated and operation of expenditure is stopped. By the way, it is a hatchet so that CR machine is called in recent years, and it may lend with this expenditure equipment, may come to pay out a ball, the complicated number of game spheres may be treated, it may become difficult to carry out movable with the above-mentioned cylinder type expenditure equipment and a sprocket method may be adopted for the thing of a cylinder type. The switch which detection with an insufficient game sphere is also used like before, is in it, and detects the shortage of a game sphere is used regardless of the fault of this microswitch, although the microswitch is generally used. Detection with an insufficient game sphere may be carried out to that the time of being turned on in the range of operation with a microswitch is called OF, the time of becoming off is called RF, and there is an error on manufacture of OF and RF, and the contact inside a switch being created by the phosphor bronze, and this phosphor bronze having a game sphere, if a configuration storage-element is also contained [neither of] and this property is taken into consideration. Detail of this is given with reference to drawing 4 .

[0005] If drawing 4 carries out fundamental operation of a game machine with the equipment which calls the mechanism board prepared in the tooth back of a game machine, and performs winning-a-prize detection, expenditure of a prize sphere, etc. and is attached to this mechanism board, it omits detailed drawing and explains only the prize sphere expenditure equipment which is this technical problem. The awarded-balls tank which stores a game sphere in the mechanism board which does not illustrate the expenditure equipment 80 shown in (a) of drawing 4 as a prize sphere is formed, the tank rail 81 is connected to the downstream of this awarded-balls tank, and this expenditure equipment 80 is further formed in one with the ****

pilot switch 88 through the curve rail 82. On the curve rail 82, if the **** lever 90 is formed and this **** lever 90 is operated, the game sphere from the awarded-balls tank to the upper guide 95 can be sampled. The switch actuator 84 with which it is supported to revolve by the guidance actuator pivot 89 guidance actuator 83 at the downstream of the upper guide 95, and the part is prepared in the **** pilot switch 88 of a machine contact method is made to contact. therefore, the time of there being a game sphere — the game sphere between the guidance wall surfaces 86 — the **** pilot switch 88 — close — it becomes carrying out, and if a game sphere is lost, it will be in the splendid state where the **** pilot switch 88 was turned off. The game sphere has resulted [from the guidance wall surface 86] in the sprocket 92 through the lower guide 96. In addition, if energization which a sprocket 92 is controlled by the drive motor 93, and does not give detail is carried out, a drive motor will rotate and a sprocket 92 will also rotate in the direction of dotted-line arrow B. It will be discharged by the upper pan which a game sphere flows in the direction of a lower stream of a river, and is not illustrated through the sphere detection sensor 94 so that it may understand also drawing if a sprocket 92 rotates. [0006] Detail of the **** pilot switch 88 mentioned above in drawing 4 (b) is given. If the switch knob 85 operated with the switch actuator 84 is formed in the **** pilot switch 88 and the switch actuator 84 operates to a switch side, it will become the form where a switch knob 85 is pushed in, and will be in an ON state. It is made of the phosphor bronze which attached the contact to that the tolerance of operation on manufacture is decided and this switch has a thing called what mm OF what mm operation RF operation, and the internal spring by here [of a machine contact method]. Although this phosphor bronze is a few, by the tolerance of the RF operation 99 which may carry out configuration storage and is shown by the OF operation 98 and the dotted line, and configuration storage, a switch cannot be easily turned on depending on the usage, or it cannot go out easily. When those without ***** continue with the guidance actuator 83, the position which the **** pilot switch 88 turns on changes, and it stops sometimes turning on. This is that expenditure stops in expenditure of a game sphere, and if it is made into a game visitor, it is disagreeable. Since you can perform detection of the game sphere having been lost by the sphere detection sensor 94 even if there is no **** pilot switch 88, since a sphere detection sensor 94 prepares and there is, suppose that what is considered as this cure is stated as this solution means below. [0007]

[Means for Solving the Problem and its Effect] The launcher which discharges a game sphere as a claim 1 shows, The game sphere of the number of conventions by the expenditure equipment and the **** control unit which originate in winning a prize etc. having been materialized by the behavior of the game sphere discharged by this launcher, and pay out the game sphere of the number of conventions as a prize sphere with the expenditure equipment which has a **** expenditure means. The number detection equipment of expenditure game spheres of this expenditure

equipment, A winning-a-prize detection means to detect winning a prize, and the sphere tank which supplies the game sphere used as a prize sphere to the aforementioned expenditure equipment, In the pinball machine which consists of a game sphere detection means to detect the existence of the game sphere prepared in the tank rail which guides a game sphere from this sphere tank, this tank rail, or a sphere tank When the aforementioned winning-a-prize detection means detects winning a prize and the aforementioned expenditure equipment pays out a game sphere, When the aforementioned game sphere detection means detects the empty of a game sphere and the number detection equipment of expenditure game spheres of the aforementioned expenditure equipment cannot detect a game sphere, while interrupting expenditure of a game sphere, the aforementioned winning-a-prize detection means is also interrupted. The pinball machine characterized by making expenditure of a game sphere resume when the aforementioned game sphere detection means detects a game sphere, and making the aforementioned winning-a-prize detection means resume if the number detection equipment of expenditure game spheres of the aforementioned expenditure equipment detects a game sphere. When the detector which detects the existence of the game sphere which there is no game sphere in an awarded-balls tank, and was prepared in the tank rail detects the empty of a game sphere and the number detection equipment of expenditure game spheres does not detect passage of a game sphere, winning-a-prize detection is also stopped. When the number detection equipment of expenditure game spheres detects passage of a game sphere by the detector which detects the existence of a game sphere having stopped detecting the empty of a game sphere, winning-a-prize detection is made to resume. That is, even if it does not form the detector which detects the existence of a game sphere between a tank rail and expenditure equipment, it becomes detectable [the existence of a game sphere].

[0008] It is the pinball machine characterized by to pay out the game sphere of the number of conventions with the expenditure equipment of 2 when the number detection equipment of expenditure game spheres of 1 of the expenditure equipment formed in a pinball machine according to claim 1 in a claim 2 when the aforementioned game sphere detection means does not detect empty does not detect expenditure of a game sphere and the number detection equipment of expenditure game spheres of 2 of expenditure equipment can detect expenditure of a game sphere. [two or more] For example, it becomes, without becoming that it is possible to investigate the cause which cannot perform the number detection of expenditure game spheres in the meantime, collecting to a winning-a-prize sphere reservoir, when there are many winning-a-prize spheres, and gearing in a winning-a-prize sphere, since it enabled it to continue expenditure as long as it was detectable by other number detection of expenditure game spheres even if 1 ** could not detect a game sphere with the number detection equipment of expenditure game spheres, when it was 2 **** beam expenditure equipment.

[0009] A claim 3 is a pinball machine characterized by performing information with a

display and voice, or information with display or voice with display when either cannot detect a game sphere in a pinball machine a claim 1 or given in two among the aforementioned number detection equipment of expenditure game spheres formed. [two or more] Prompt management can be performed if display and an audio station report when expenditure is impossible with the one number detection equipment of expenditure game spheres.

[0010] In a pinball machine a claim 1 or given in two, when detection two or more aforementioned number detection equipments [whose] of expenditure game spheres of all are expenditure cannot be performed, a claim 4 performs information with a display and voice, or information with display or voice with display, and operates the aforementioned expenditure equipment with an intermittent operation means. The pinball machine characterized by making it the original operation if it will change into operation shown in a claim 3 if either detects a game sphere among the aforementioned number detection equipment of expenditure game spheres, and all the aforementioned number detection equipments of expenditure game spheres detect a game sphere. It is made to operate intermittently [when the formed number detection equipment of expenditure game spheres can perform neither of detection of a game sphere, in order that it may prevent superfluous operation]. Information shown in a claim 3 and different information are performed, if either detects a game sphere among the number detection equipment of expenditure game spheres, it will change into operation shown in a claim 3, and if all the number detection equipments of expenditure game spheres detect a game sphere, it will return to the original state. Although it can be coped with before all stop since ball plugging in the prepared tank rail does not stop at once, stops one by one and goes, when all stop temporarily, management of a salesclerk can perform [judgment] smoothly whether a cause is in any they are by the plain-gauze cone and this.

[0011] A claim 5 is a pinball machine characterized by the aforementioned game sphere expenditure equipment constituting **** equipment, the number detection equipment of expenditure game spheres, and the sphere sending-out section from a claim 1 in one in a pinball machine given in five. After exchange of equipment itself becoming easy when a **** trouble generates **** equipment, the number detection equipment of expenditure game spheres, and the sphere sending-out section by constituting in one structurally, and exchanging expenditure equipment, it is not necessary to adjust it and, and it can attach easily also in the manufacture stage of a game machine. Therefore, management is possible, without making trouble for a game visitor, if it is among about [becoming advantageous in cost by the production phase] and a game.

[0012]

[The gestalt of operation] Next, the suitable example of this invention is explained with reference to a drawing. In addition, the gestalt of operation of this invention cannot be overemphasized by that various gestalten can be taken, as long as it is not limited to the following example at all and belongs to the technical range of this

invention.

[0013]

[Example] Drawing 1 calls a game machine henceforth with the pachinko machine represented by the pinball machine. Drawing 1 is the transverse-plane perspective diagram of the game machine 10, and is installed in left-hand side on both the game machine installation islands that do not equip with and illustrate the card reader 25 which controls the loan of a game sphere. It is also the housing which the game machine 10 has an outer frame 12, and fixes the coat of the game machine 10 to nothing and a game machine installation island, and the front frame 13 is attached in the outer frame 12 possible [opening and closing] to the outer frame 12 with the hinge 14 attached up and down. It is attached in the upper part with the great success lamp 17, and a stop lamp 18, the full display lamp 19, the discharge synchronous lamp 20, and the expenditure synchronous lamp 21 are attached by the front frame 13 with one-structure on right-hand side. Usually, although nothing is seen, if discharge is started, synchronizing with discharge, a lamp will repeat blink, for example. If a character looms, and visible can be carried out and the light is put out when the light is switched on, it will have the structure where nothing is seen and a stop lamp 18, the full display lamp 19, and the expenditure synchronous lamp 21 will also carry out the same work. The game board 11 which had the pattern display 30 shown by the dotted line is inserted in in the center at the front frame 13, and the circumference of the inside of the front frame 13 is attached in the window frame-like metal flask 34. If the sphere secret passage 23 is established in the left-hand side of a metal flask 34 and it inserts in this sphere secret passage by ***** 24, it has structure which can do **** which mentions a detail later.

[0014] The lower pan 16 is formed in the upper pan 15 and the bottom of it a little at the Chuo bottom of the front frame 13, the loan button 28 and the settlement-of-accounts button 29 which operate a card reader 25 on the right-hand side of the upper pan 15 are prepared, and if the card exchanged for the money which does not give detail to the card mouth 26 of a card reader 25 is inserted, the contents of the card inserted in the display 27 of a sphere on hire prepared in the upper pan 15 will be displayed. If a card is inserted, the display 27 of a sphere on hire is not zero display and the loan button 28 will be pushed, arbitrary numbers of game spheres will pay out an upper pan. If the settlement-of-accounts button 29 is pushed when the balance of a sphere on hire of the display 27 of a sphere on hire remains, a card will be discharged from the card mouth 26. The discharge handle 22 for discharging a game sphere at the lower right of the front frame 13 is attached, and if this discharge handle 22 is operated, the game sphere fed into the upper pan 15 will be made as for discharge to the game board 11. Next, drawing 2 explains back structure of the game machine 10.

[0015] If the discharge handle 22 which the discharge handles 22 explained by drawing 1 are formed successively by the launcher 40 with which the discharge motor 41 and the discharge hammer 42 were attached to the lower left of the game

machine 10, and was mentioned above is operated, the discharge motor 41 will operate and the discharge hammer 42 will operate further. It is attached in the game machine 10 so that the mechanism board 35 for managing all operation of the game machine 10 may cover the game board 11 from a tooth back. The tank rail 45 with which the awarded-balls tank 43 by which the game sphere as a prize sphere or a sphere on hire was stored was attached to the upper part of the mechanism board 35, and the supply switch 44 for supplying detection and the game sphere of the existence of a game sphere to the bottom of it from a game machine installation island was attached is connected, and the game sphere of the awarded-balls tank 43 is changed into a flowing-down state to the tank rail 45. The curve rail 56 having expenditure equipment 46 and **** equipment 47 is connected to the downstream of the tank rail 45. To **** equipment 47, the **** lever 52 which ***** 54 is formed and is interlocked with this ***** 54 has energized the **** lever 52 so that ***** 54 may not separate with the lever spring 53, the game sphere which ***** 54 separates because ***** 24 stated by drawing 1 pushes this **** lever 52, and is in the awarded-balls tank 43 or the tank rail 45 is poured to the **** path 55, and **** comes be made. Moreover, the game sphere in all the awarded-balls tanks 43 and tank rails 45 is discharged, and since sphere pressure is not applied to ***** 54 if the **** lever 52 is again pushed by ***** 24, what was in the **** state returns. It is in the state which the present state to illustrate has a game sphere neither in the awarded-balls tank 43 nor the tank rail 45, and the expenditure equipment covering 51 of expenditure equipment 46 has removed, and the control solenoid 58 which mentions a detail later is attached to expenditure equipment covering.

[0016] The sprocket 48 for paying out a game sphere to expenditure equipment 46 is formed, and the number detection equipment 50 of expenditure game spheres is formed in the downstream. It can restrict [a number / that the sprocket 48 counted the number of the game spheres which the number detection equipment 50 of expenditure game spheres which is in a path the middle if the sphere sending-out section 79 which carries out an alignment send is realized in the game sphere, the start of this expenditure is directed focusing on a sprocket 48, a sprocket 48 will rotate and a game sphere will be poured to the awarded-balls path 49 which is a downstream passes, and it was able to set / of the sphere] The tooth-back section of the pattern display 30 is under the tank rail 45, and the game board control unit 33 is attached in the lower part. The game board control unit 33 is attached in the game board 11 removable, and control of the various winning-a-prize mouths prepared in the front face of the game board 11 which describes and illustrates neither the pattern display 30 nor a detail etc. is performed. The seating-rim control unit 32 is formed in the bottom of it of the game board control unit 33, and this seating-rim control unit 32 is performing control of a stop lamp 18, the full display lamp 19, the discharge synchronous lamp 20, and expenditure synchronous lamp 21 grade on the expenditure equipment 46 mentioned above, a launcher and the great

success lamp 17, and right-hand side.

[0017] In addition, the game board control unit 33 has also transmitted intermittently the game information to which initial transmission is performed to the seating-rim control unit 32, and the game board control unit 33 generates further initial setting of the number of winning-a-prize spheres, or a sphere on hire to each winning-a-prize mouth which is not illustrated in the game board 11 in a game to the seating-rim control unit 32 at the time of power supply ON of the game machine 10. The control information panel 31 is formed in the seating-rim control unit 32, and an operation situation, trouble information, etc. on the game board 11 are displayed on it. The supply switch 44 can display the sky condition of a game sphere. For example, "tank NITAMAGAARIMASEN", moreover, the thing and judgment with which the game sphere has geared on the tank rail 45 when the supply switch 44 does not detect empty and detection of the game sphere which is a prize sphere is not made to the number detection equipment 50 of expenditure game spheres — it can do — the next door "TAMATSUMARIDESU" where a game sphere does not flow can be displayed. Since the **** pilot switch 88 shown in drawing 4 stated with the technical problem in which it is going to solve invention generally prepared to this game machine 10 has not prepared, the **** pilot switch 88 sometimes operates and it has not been called an expenditure halt of a game sphere. Even if there is no **** pilot switch 88, it is possible to perform equivalent work with the number detection equipment 50 of expenditure game spheres, and as a The means for solving a technical problem and its effect explained the work which was moreover excellent, it can realize.

[0018] A card reader 25 is put side by side on the right-hand side of the outer frame 12 which makes the coat of the game machine 10, and the information connector 38 of a sphere on hire is connected to the seating-rim control unit 32 by the information line 37 of a sphere on hire. It is transmitting to the amusement center managerial system which does not illustrate the great success information and the reduction-of-working-hours mode information that detail which the external contact 39 is formed in the right-hand side of the awarded-balls tank 43, and is generated in the game machine 10 is not given, inaccurate game information, and the game sphere supply demand information various information by the supply switch 44 formed in the pattern change information and the tank rail 45 of the pattern display 30. The power cord 36 which provides all the power of the game machine 10 is attached to the seating-rim control unit 32.

[0019] Next, suppose that detail of this expenditure equipment 46 is given with the **** exploded view of the expenditure equipment 46 attached to the mechanism board 35 by drawing 3. Expenditure equipment 46 is carrying out internal protection with the expenditure equipment covering 51 carried out for attaching in 2 **** eclipse mechanism board 35. The solenoid standing ways 63 are attached to the expenditure equipment covering 51, and the control solenoid 58 is attached in the solenoid standing ways 63. If the fixed ratchet 59 accompanied by the slave 62 is

attached at the nose of cam of state ***** rareness and a plunger 60 of which the plunger 60 made to carry out piston operation jumps out with the press spring 57 and power is energized to the control solenoid 58, a plunger 60 withdraws and it is drawn in the depression direction of the control solenoid 58 with a slave 62 along with the wall surface of the solenoid standing ways 63, and if the fixed ratchet 59 also operates in this direction and intercepts power, it will operate to an above-mentioned opposite direction the curve rail 56 of expenditure equipment 46 — a push guide — the sprocket shaft 64 with a hole 78 is attached, a sprocket 48 is inserted in the sprocket shaft 64 in the direction of dashed line arrow P, and some solenoid standing ways 63 of the above-mentioned expenditure equipment covering 51 are intruded by the attachment section 74 in the direction of dashed line arrow T. Therefore, in case the expenditure equipment covering 51 is attached in the mechanism board 35, anchoring can do the nose of cam of the solenoid standing ways 63 in the state where did not rock only by inserting in the attachment section 74, but it was stabilized.

[0020] When the rotation ratchet 61 is formed in a sprocket 48 and the control solenoid 58 is not energized to it, it is in the state where it geared with the fixed ratchet 59. If it energizes to the control solenoid 58, a sprocket 48 can become free and can be freely rotated also by the weight of a game sphere. ***** 54 accompanied by the ***** weight 68 is attached to the **** valve stem which is merged into expenditure equipment 46 in **** equipment 47, and is prepared in the curve rail 56 and which is not illustrated through the **** valve-stem hole 69. Since it is continuously energized downward with the ***** weight 68 by this, it is in the state of wrapping in a sprocket 48. A shift lever 72 uses the lever pivot 66 as the supporting point through the lever axial hole 77 which a plinth 67 is formed in a part of mechanism board 35, and is prepared in a shift lever 72 by the lever pivot 66, and it is a rockable. The slider 76 which the lock free pin was prepared in one side, and was prepared in another side operation axial hole 73 attaches in a shift lever 72 — having — the lock free pin 65 — the direction of dashed line arrow S — pushing — a guide — a hole **** and a slider 76 is put on the slide slot 75 established in the **** path 55 in the direction of dashed line arrow U

[0021] The open lock section 70 is formed in a slider 76, the ***** lock section 71 is formed in ***** 54, and it is usually in the state semipermanent in the ***** lock section 71 of ***** 54, and the open lock section 70 of a slider 76 at the time, and if a slider 76 operates to the opposite direction of the dashed line arrow U, the open lock section 70 and the ***** lock section 71 will separate, and ***** 54 will become free. The operation axial hole 73 has free ***** 54, if it connects with the **** lever 52 which is not illustrated and the **** lever 52 is pushed by ***** 24. Since the lock free pin 65 pushes the fixed ratchet 59, it becomes free [a sprocket 48]. A next door, if a game sphere is in a sprocket 48, the tank rail 45, and the awarded-balls tank 43, the game sphere which a sprocket 48 rotates a game sphere and is in a sprocket 48, the tank rail 45, and the awarded-balls tank 43 will

flow into the **** path 55. Since ***** 54 will move to a sprocket 48 side by the weight of the ***** weight 68 if a game sphere is lost to a sprocket 48, if the **** lever 52 is again pushed by ***** 24, the ***** lock section 71 will enter inside the open lock section 70, and ***** 54 is locked if ***** 24 is pulled out. Since this structure is mechanical operation, even if it does not have a power supply, the outstanding effect that all game spheres can be extracted is acquired.

[0022] If power is supplied to the control solenoid 58 where the game sphere was held by the sprocket 48, the tank rail 45, and the awarded-balls tank 43 and ***** 54 is fixed to them, the game sphere which a sprocket 48 begins rotation by the weight, and the game sphere from which the fixed ratchet 59 separates from the rotation ratchet 61 of a sprocket 48, and which is held in a sprocket 48 holds in a sprocket 48 will flow in the direction of the awarded-balls path 49 one by one. Since the number detection equipment 50 of expenditure game spheres is formed on the way, an one-piece one-piece game sphere is countable. The number detection equipment 50 of expenditure game spheres cannot count a game sphere, that is, if there is no game sphere, judgment of a game sphere being undetectable will be possible. The sprocket 48 of this equipment, the tank rail 45, and the number detection equipment 50 of expenditure game spheres can be paid out by one side, even if supply of a game sphere stops [1 **] at 2 *****'s. Since this will be made by management during expenditure of a game sphere if an information system reports, the number detection equipment 50 of expenditure game spheres which cannot perform detection of a game sphere at this time can also perform evasion of the trouble called ***** of a winning-a-prize sphere.

[0023] That a game sphere bites makes it the addendum of the sprocket, and the sprocket which carries out active operation of the conventional method even if it processes an addendum specially like the sprocket 48 of this equipment to an active sprocket by the case where a gap of the timing which flows by the flow of a passive game sphere, i.e., the interval of a game sphere and a game sphere, comes out, although common expenditure equipment usually rotates a sprocket with a stepping motor and is paying out the game sphere is ***** With this equipment, biting, since a sprocket 48 makes it operate passively is lost.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the game machine transverse-plane perspective diagram of an example.

[Drawing 2] It is the game machine rear view of an example.

[Drawing 3] It is the tropia exploded view which explains the operation and structure without using the equipment which detects the existence of a game sphere with the expenditure equipment of an example.

[Drawing 4] It is explanatory drawing which the game sphere existence detector in conventional expenditure equipment is attached [explanatory drawing], and operates it.

[Description of Notations]

10 [-- An outer frame, 13 / -- A front frame, 14 / -- Hinge,] -- A game machine, 11 -- The game board, 12 15 [-- A great success lamp, 18 / -- Stop lamp,] -- A top pan, 16 -- A bottom pan, 17 19 [-- Expenditure synchronous lamp,] -- A full display lamp, 20 -- A discharge synchronous lamp, 21 22 [-- *****, 25 / -- Card reader,] -- A discharge handle, 23 -- A sphere secret passage, 24 26 [-- A loan button, 29 / -- Settlement-of-accounts button,] -- A card mouth, 27 -- The display of a sphere on hire, 28 30 [-- Seating-rim control unit,] -- Pattern display, 31 -- A control information panel, 32 33 [-- The mechanism board, 36 / -- Power cord,] -- A game board control unit, 34 -- A metal flask, 35 37 [-- External contact,] -- The information line of a sphere on hire, 38 -- The information connector of a sphere on hire, 39 40 [-- A discharge hammer, 43 / -- Awarded-balls tank,] -- A launcher, 41 -- A discharge motor, 42 44 [-- Expenditure equipment, 47 / -- **** equipment,] -- A supply switch, 45 -- A tank rail, 46 48 [-- The number detection equipment of expenditure game spheres,] -- A sprocket, 49 -- An awarded-balls path, 50 51 [-- A lever spring, 54 / -- *****,] -- Expenditure equipment covering, 52 -- A **** lever, 53 55 [-- A press spring, 58 / -- Control solenoid,] -- A **** path, 56 -- A curve rail, 57 59 [-- Rotation ratchet,] -- A fixed ratchet, 60 -- A plunger, 61 62 [-- Sprocket shaft,] -- A slave, 63 -- Solenoid standing ways, 64 65 [-- A plinth, 68 / -- **** weight,] -- A lock free pin, 66 -- A lever pivot, 67 69 -- a **** valve-stem hole, 70 -- opening lock section, 71 -- **** lock section, and 72 -- a shift lever, 73 -- operation axial hole, and 74 -- attachment section 75 -- slide slot and 76 -- a slider, 77 -- lever axial hole, and 78 -- guide -- a hole and 79 -- spheres sending-out section

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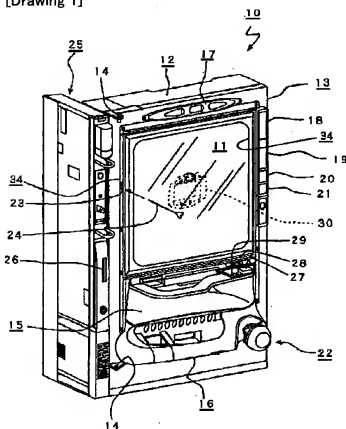
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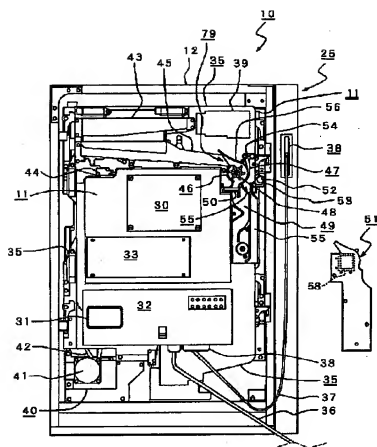
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DRAWINGS

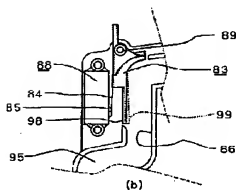
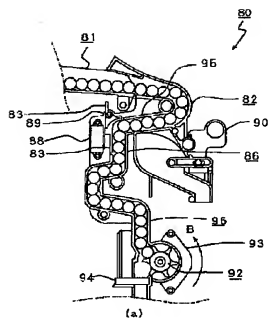
[Drawing 1]



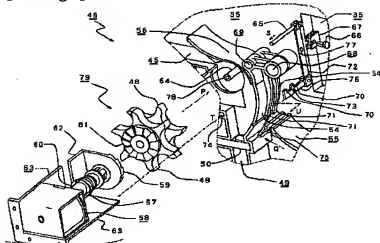
[Drawing 2]



[Drawing 4]



[Drawing 3]



[Translation done.]